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1

**CLAIMS**

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3       1. A method of generating a filter graph for a user-defined processing  
4 project, the method comprising:

5             analyzing the project for multiple accesses to a single source of media  
6 content;

7             determining that the multiple accesses cannot be combined and/or share a  
8 common processing chain; and

9             coupling a single instance of the media source to the one or more  
10 processing chains through a software object to satisfy the multiple accesses  
11 without invoking a commensurate number of multiple instances of the media  
12 source.

13

14       2. A method according to claim 1, further comprising:

15             receiving a request for content at the software object; and

16             issuing a seek command from the software object to the media source to  
17 retrieve the media for presentation to a requesting processing chain.

18

19       3. A method according to claim 1, wherein the method is implemented  
20 by a render engine, exposed from an operating system to a media processing  
21 system executing on a computing system.

22

23       4. A method according to claim 3, wherein the software object is a  
24 segment filter.

1           **5.** A method according to claim 1, further comprising:  
2                 identifying multiple simultaneous access to the media source; and  
3                 invoking a commensurate number of software objects, coupling a  
4                 commensurate number of instances of the media source to processing chains to  
5                 satisfy the multiple simultaneous requests.

6

7           **6.** A storage medium comprising a plurality of executable instructions  
8                 including at least a subset of which that, when executed, implement a method  
9                 according to claim 1.

10

11           **7.** A computing system comprising:  
12                 a storage medium having stored thereon a plurality of executable  
13                 instructions; and  
14                 an execution unit, coupled to the storage medium, to execute at least a  
15                 subset of the plurality of executable instructions to implement a method according  
16                 to claim 1.

17

18           **8.** A method of generating a filter graph for a user-defined processing  
19                 project, the method comprising:

20                 analyzing the project for multiple accesses to a single source of media  
21                 content;

22                 determining that the multiple accesses cannot be combined and/or share a  
23                 common processing chain; and

24                 coupling a single instance of the media source to the one or more  
25                 processing chains through a software object to satisfy the multiple accesses

1 without invoking a commensurate number of multiple instances of the media  
2 source, wherein the one or more processing chains comprise:

3 a scalable, dynamically reconfigurable matrix switch having a  
4 plurality of inputs and a plurality of outputs;

5 at least one matrix switch input being communicatively linked with a  
6 first processing chain portion;

7 at least one other matrix switch input being communicatively linked  
8 with a second processing chain portion;

9 the matrix switch being configured to dynamically couple one or  
10 more of the matrix switch inputs to one or more of the matrix switch  
11 outputs.

12  
13 9. A method according to claim 8, further comprising:

14 receiving a request for content at the software object; and  
15 issuing a seek command from the software object to the media source to  
16 retrieve the media for presentation to a requesting processing chain.

17  
18 10. A method according to claim 8, wherein the method is implemented  
19 by a render engine, exposed from an operating system to a media processing  
20 system executing on a computing system.

21  
22 11. A method according to claim 10, wherein the software object is a  
23 segment filter.

1           **12.** A method according to claim 8, further comprising:

2           identifying multiple simultaneous access to the media source; and

3           invoking a commensurate number of software objects, coupling a

4           commensurate number of instances of the media source to processing chains to

5           satisfy the multiple simultaneous requests.

6

7           **13.** A storage medium comprising a plurality of executable instructions

8           including at least a subset of which that, when executed, implement a method

9           according to claim 8.

10

11           **14.** A computing system comprising:

12           a storage medium having stored thereon a plurality of executable

13           instructions; and

14           an execution unit, coupled to the storage medium, to execute at least a

15           subset of the plurality of executable instructions to implement a method according

16           to claim 8.

17

18           **15.** A method of generating a filter graph for a user-defined processing

19           project, the method comprising:

20           analyzing the project for multiple accesses to a single source of media

21           content;

22           determining that the multiple accesses cannot be combined and/or share a

23           common processing chain;

24

25

1       coupling a single instance of the media source to the multiple processing  
2       chains through a software object to satisfy the multiple accesses without invoking  
3       a commensurate number of multiple instances of the media source; and

4       ascertaining whether the multiple processing chains share common pre-  
5       processing attributes and, if so, interposing one or more associated filters between  
6       the single source of media content and the software object.

7  
8  
9       **16.** A method according to claim 15, further comprising:  
10      receiving a request for content at the software object; and  
11      issuing a seek command from the software object to the media source to  
12      retrieve the media for presentation to a requesting processing chain.

13  
14       **17.** A method according to claim 15, wherein the method is  
15      implemented by a render engine, exposed from an operating system to a media  
16      processing system executing on a computing system.

17  
18       **18.** A method according to claim 17, wherein the software object is a  
19      segment filter.

20  
21       **19.** A method according to claim 15, further comprising:  
22      identifying multiple simultaneous access to the media source; and  
23      invoking a commensurate number of software objects, coupling a  
24      commensurate number of instances of the media source to processing chains to  
25      satisfy the multiple simultaneous requests.

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2       **20.** A storage medium comprising a plurality of executable instructions  
3 including at least a subset of which that, when executed, implement a method  
4 according to claim 15.  
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